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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,496	03/08/2001	Bert L. Fransis	P2300	6057
24739	7590	07/26/2006	EXAMINER	
CENTRAL COAST PATENT AGENCY PO BOX 187 AROMAS, CA 95004			TRAN, PABLO N	
			ART UNIT	PAPER NUMBER
			2618	
DATE MAILED: 07/26/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/803,496

**Applicant(s)**

FRANSIS, BERT L.

**Examiner**

Pablo N. Tran

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 1-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. The amendment filed 07/10/06 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Regarding claim 23, the new subject matters, "the four circuit element and one LO then doing conversion for four distinct and unique bandwidths in the broadband spectrum".

Regarding claim 27, the new subject matters, "the four circuit elements and one LO provide for conversion for four distinct signal bands in the broadband spectrum".

Regarding claim 31, the new subject matters, "the four conversion elements and the one LO to provide up and down conversion for four distinct bands in the broadband spectrum".

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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3. Claims 23, 27, and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 23, new subject matter "the four circuit element and one LO then doing conversion for four distinct and unique bandwidths in the broadband spectrum" was not disclosed in the specification as originally filed.

Regarding claim 27, new subject matter "the four circuit elements and one LO provide for conversion for four distinct signal bands in the broadband spectrum" was not disclosed in the specification as originally filed.

Regarding claim 31, new subject "the four conversion elements and the one LO to provide up and down conversion for four distinct bands in the broadband spectrum" was not disclosed in the specification as originally filed.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Regarding claim 1, the claimed limitation "may" renders the claim indefinite because it is unclear whether the limitation(s) following the claimed limitation are part of the claimed invention. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 103***

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizumoto et al. (6,393,299) in view of Pascoe et al. (4,245,355) and further in view of Haruki et al. (4,246,539)

As per claim 22, Mizumoto et al. disclosed circuitry for managing RF signals in a broadband array having a first interface (see fig. 4, where it is clear that the multi input/output RF signals are to the left of the converter) for transmitting or receiving a plurality of different RF frequency bands in the broadband array; a second interface (see fig. 4, where it is clear that the multi input/output RF signals are to the right of the converter) for receiving or transmitting signals at an intermediate frequency; a first and a second circuit element (fig. 1/no. 41-42 & 161-162, fig. 4/no. 41-42 & 161-162, fig. 5/no. 41-42 & 161-162, fig. 6/no. 41-42 & 161-162, fig. 7/no. 41-42 & 161-162) enabled for up-conversion and down-conversion of RF signals from and to the intermediate frequency, also enabled for sideband selection, and coupled to both the first and the second interface; a voltage-controlled local oscillator (fig. 1/no. 19, fig. 4/no. 191-192, fig. 5/no. 191-192, fig. 6/no. 191-192, fig. 17/no. 18-19) providing a specific output frequency coupled directly to the first circuit element and to the second circuit element; wherein the first circuit element may convert to and from the intermediate frequency for

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a first unique bandwidth in the broadband spectrum through selecting the lower sideband of the LO frequency, may convert for a second unique bandwidth through selecting the upper sideband, and the second circuit element may convert for a third unique bandwidth selecting the lower sideband of the LO frequency, and may convert for a fourth unique frequency through selecting the upper sideband, the one LO and two conversion elements then capable of conversion for four distinct and unique bandwidths in the broadband spectrum (fig. 1/no. EX1, fig. 4/no. EX2, fig. 5/no. EX3, fig. 6/no. EX4, col. 4/ln. 5-40, col. 5/ln. 1-col. 6/ln. 67).

Mizumoto et al. do not specifically suggested that the converter is integrated on an IC. However, such is notoriously well known in the art, as suggest by Pascoe et al. (fig. 5A, col. 6ln. 14-16). Therefore, it would have been obvious to one of ordinary skill in the art to provide such IC frequency converter to the radio communication system of Mizumoto et al. in order to simplify the circuitry and thus facilitate fabrication but also reduce space and cost.

The modified radio communication system of Mizumoto et al. discloses such method of utilizing frequency multiplier (see Mizumoto et al., col. 9/ln. 29-34) but not explicitly a frequency doubling. However, such frequency doubling circuitry is notoriously well known in the art, as taught by Haruki et al. (fig. 6/no. 19). Therefore, it would have been obvious to one of ordinary skill in the art to provide such frequency doubling circuitry couple to the VCO to the modified radio communication system of Mizumoto et al. in order to provide such RF frequency-matching dependent upon the requirements of the radio telecommunication system.

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As per claim 23, the modified communication system of Mizumoto et al. & Pascoe et al. in view of Haruki et al. further disclose a third and a fourth circuit element, each capable of coupled to the LO through a second frequency doubling device, wherein the first and the second circuit elements do lower sideband selection and the third and fourth do upper sideband selection, the four circuit element and one LO then doing conversion for four distinct and unique bandwidths in the broadband spectrum (fig. 1/no. EX1, fig. 4/no. EX2, fig. 5/no. EX3, fig. 6/no. EX4, col. 4/ln. 5-40, col. 5/ln. 1-col. 6/ln. 67).

As per claims 24-26, 28-30, and 32-34, the modified communication system of Mizumoto et al. & Pascoe et al. in view of Haruki et al. further disclose circuit element for down-conversion and up-conversion (fig. 1/no. EX1, fig. 4/no. EX2, fig. 5/no. EX3, fig. 6/no. EX4, col. 4/ln. 5-40, col. 5/ln. 1-col. 6/ln. 67).

As per claims 27 and 31, as stated above in claim 22, the modified communication system of Mizumoto et al. & Pascoe et al. in view of Haruki et al. further disclose an antenna (fig. 1/no. 1, fig. 7/no. 1); circuitry couple to the antenna (fig. 1/no. EX1, fig. 4/no. EX2, fig. 5/no. EX3, fig. 6/no. EX4); modulation circuit (fig. 1/no. 8 & 12, fig. 7/no. 8 & 12); wherein the conversion circuitry comprises a first, second, third and a fourth circuit element coupled to the first interface, for up-conversion or down-conversion of signals to and from an intermediate frequency (1F), the first and third set for lower sideband selection and the second and fourth set for upper sideband selection, and an on-chip voltage-controlled local oscillator (LO) coupled to the first and third circuit elements directly and to the second and fourth circuit elements through a

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voltage doubling device, such that the four circuit elements and one LO provide for conversion for four distinct signal bands in the broadband spectrum (fig. 1/no. EX1, fig. 4/no. EX2, fig. 5/no. EX3, fig. 6/no. EX4, col. 4/ln. 5-40, col. 5/ln. 1-col. 6/ln. 67).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (571)272-7898. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) System. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-directauspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**PABLO N. TRAN**  
**PRIMARY EXAMINER**



*Surber*

July 23, 2006